

The ability to create a broadband plasma relativistic noise amplifier and its transition to the generation mode

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Plasma relativistic microwave amplifiers (PRMA) are a unique class of devices – plasma masers based on the generation of microwave radiation as a result of the interaction of a tubular high-current relativistic beam with tubular plasma. The purpose of this work is to demonstrate the possibility of building a noise amplifier in geometry with inverse geometry due to breaking the feedback, comparing the obtained data with the amplifiers with feedback. We use of a short pulse duration of REB 4 ns [5] to break the feedback in the numerical experiment. The transition from the generation mode with feedback to the generation mode without feedback will be shown. It will allow to find the optimal parameters of the future experimental setup.

Keywords: plasma relativistic microwave amplifiers, broadband, high-current relativistic beam.

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